

MAILING CERTIFICATE

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as Express Mail No. EV689731230US in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

10 Feb 2006

Date

by

Signature

Barry L. Davison
(printed name)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Laird and Eads

Filing Date: April 2, 2001

Application No.: 09/825,566

For: EPIGENETIC SEQUENCES FOR ESOPHAGEAL ADENOCARCINOMAS

Docket: 47675-18

Date: February 10, 2006

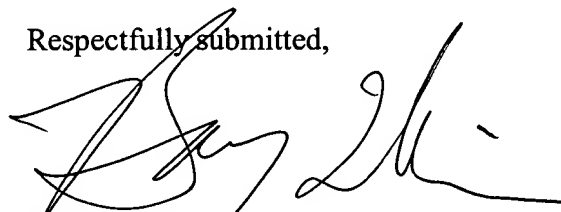
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SEQUENCE LISTING TRANSMITTAL

Sir:

The Sequence Listing is formatted by IBM-PC using MS-Windows. The document is entitled "47675-18 SEQ LIST.txt" and is 26 KB, and was created February 10, 2006.

Respectfully submitted,



Barry L. Davison, Ph.D., J.D.
Attorney for Applicants
Registration No. 47,309

Davis Wright Tremaine LLP
2600 Century Square
1501 Fourth Avenue
Seattle, WA 98101-1688
Tel: 206-628-7621
Fax: 206-628-7699



47675-18.ST25.txt

SEQUENCE LISTING

<110> LAIRD, Peter W.
EADS, Cindy A.

<120> EPIGENETIC SEQUENCES FOR ESOPHAGEAL ADENOCARCINOMA

<130> 47675-18

<140> US 09/825,566

<141> 2001-04-02

<150> US 60/193,839

<151> 2000-03-31

<160> 67

<170> PatentIn version 3.3

<210> 1

<211> 22

<212> DNA

<213> Homo sapiens

<400> 1

tggaattttc ggttgattgg tt

22

<210> 2

<211> 19

<212> DNA

<213> Homo sapiens

<400> 2

aacaacgtcc gcacctcct

19

<210> 3

<211> 18

<212> DNA

<213> Homo sapiens

<400> 3

acccgacccc gaaccgcg

18

<210> 4

<211> 19

<212> DNA

<213> Homo sapiens

<400> 4

ggcgttcggtt ttgggattg

19

<210> 5

<211> 19

<212> DNA

<213> Homo sapiens

<400> 5
gccgacacgc gaactctaa 19

<210> 6
<211> 24
<212> DNA
<213> Homo sapiens

<400> 6
cgataaaacc gaacgacccg acga 24

<210> 7
<211> 18
<212> DNA
<213> Homo sapiens

<400> 7
gagcgcgcgt agttagcg 18

<210> 8
<211> 17
<212> DNA
<213> Homo sapiens

<400> 8
tccgacacgc cctttcc 17

<210> 9
<211> 30
<212> DNA
<213> Homo sapiens

<400> 9
ctccaacacc cgactactat atccgcgaaa 30

<210> 10
<211> 23
<212> DNA
<213> Homo sapiens

<400> 10
gttttggaag tatgagggtg acg 23

<210> 11
<211> 19
<212> DNA
<213> Homo sapiens

<400> 11
ttcccgccgc tataaatcg 19

```

<210> 12
<211> 30
<212> DNA
<213> Homo sapiens

<400> 12
attccgccaa tacacaacaa ccaataaacg 30

<210> 13
<211> 21
<212> DNA
<213> Homo sapiens

<400> 13
gcgtcggagg ttaaggttgt t 21

<210> 14
<211> 22
<212> DNA
<213> Homo sapiens

<400> 14
ctctccaaaa ttaccgtacg cg 22

<210> 15
<211> 19
<212> DNA
<213> Homo sapiens

<400> 15
aactcgctcg cccgccgaa 19

<210> 16
<211> 28
<212> DNA
<213> Homo sapiens

<400> 16
ctaacgtata acgaaaatcg taacaacc 28

<210> 17
<211> 25
<212> DNA
<213> Homo sapiens

<400> 17
agtatgaagg gtaggaagaa ttcgg 25

<210> 18
<211> 30
<212> DNA
<213> Homo sapiens

```

<400> 18
 ccttacctct aaataccaac cccaaaccg 30

<210> 19
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 19
 gaacccaaac gctcccat 19

<210> 20
 <211> 27
 <212> DNA
 <213> Homo sapiens

<400> 20
 ttatatgtcg gttacgtgcg tttatat 27

<210> 21
 <211> 22
 <212> DNA
 <213> Homo sapiens

<400> 21
 cccgtcgaaa acccgccgat ta 22

<210> 22
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 22
 acgggcgttt tcggtagtt 19

<210> 23
 <211> 20
 <212> DNA
 <213> Homo sapiens

<400> 23
 ccgaacctcc aaaatctcga 20

<210> 24
 <211> 26
 <212> DNA
 <213> Homo sapiens

<400> 24
 cgactctaaa ccctacgcac gcgaaa 26

<210> 25

47675-18.ST25.txt

<211> 26
<212> DNA
<213> Homo sapiens

<400> 25
aatttttaggt tagaggggta tcgcgt 26

<210> 26
<211> 22
<212> DNA
<213> Homo sapiens

<400> 26
tccccaaaac gaaactaacg ac 22

<210> 27
<211> 19
<212> DNA
<213> Homo sapiens

<400> 27
cgcccacccg acctcgcat 19

<210> 28
<211> 20
<212> DNA
<213> Homo sapiens

<400> 28
aggaaggaga gagtgcgtcg 20

<210> 29
<211> 21
<212> DNA
<213> Homo sapiens

<400> 29
cgaataatcc accgttaacc g 21

<210> 30
<211> 29
<212> DNA
<213> Homo sapiens

<400> 30
ttaacgacac tcttccttc tttcccacg 29

<210> 31
<211> 23
<212> DNA
<213> Homo sapiens

<400> 31

gtcggcgtcg tgatttagta ttg

23

<210> 32
 <211> 23
 <212> DNA
 <213> Homo sapiens

<400> 32
 aaactacgac gacgaaactc caa

23

<210> 33
 <211> 29
 <212> DNA
 <213> Homo sapiens

<400> 33
 aaacctcgcg acctccgaac cttataaaa

29

<210> 34
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 34
 ctatcgccgc ctcacgt

18

<210> 35
 <211> 30
 <212> DNA
 <213> Homo sapiens

<400> 35
 cgttatatat cgttcgtagt attcgtgttt

30

<210> 36
 <211> 22
 <212> DNA
 <213> Homo sapiens

<400> 36
 cgcgacgtca aacgccacta cg

22

<210> 37
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 37
 cggaagcgtt cgggtaaag

19

<210> 38
 <211> 18

<212> DNA
<213> Homo sapiens

<400> 38
aattccaccg ccccaaac 18

<210> 39
<211> 29
<212> DNA
<213> Homo sapiens

<400> 39
tttccgcaa atatcttttc ttcttcgca 29

<210> 40
<211> 18
<212> DNA
<213> Homo sapiens

<400> 40
cgacgcacca acctaccg 18

<210> 41
<211> 25
<212> DNA
<213> Homo sapiens

<400> 41
gttttgagtt ggttttacgt tcggt 25

<210> 42
<211> 19
<212> DNA
<213> Homo sapiens

<400> 42
acgccgcgct cacctccct 19

<210> 43
<211> 17
<212> DNA
<213> Homo sapiens

<400> 43
ggaaaggcgc gtcgagt 17

<210> 44
<211> 18
<212> DNA
<213> Homo sapiens

<400> 44
tcccctatcc caaaccg 18

<210> 45
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 45
 cgcgcggtttc ccgaaccg 18

<210> 46
 <211> 22
 <212> DNA
 <213> Homo sapiens

<400> 46
 ttagttcgcg tatcgattag cg 22

<210> 47
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 47
 actaaacgcc gcgtccaa 18

<210> 48
 <211> 21
 <212> DNA
 <213> Homo sapiens

<400> 48
 tcacgtccgc gaaactcccg a 21

<210> 49
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 49
 gcgcggagcg tagttagg 18

<210> 50
 <211> 20
 <212> DNA
 <213> Homo sapiens

<400> 50
 caaaccgcc tactcgatcat 20

<210> 51
 <211> 21
 <212> DNA

<213> Homo sapiens

<400> 51

cacgaacgac gccttcccga a

21

<210> 52

<211> 19

<212> DNA

<213> Homo sapiens

<400> 52

cggcgtagg aaggacgat

19

<210> 53

<211> 24

<212> DNA

<213> Homo sapiens

<400> 53

tctcaaacta taacgcgcct acat

24

<210> 54

<211> 29

<212> DNA

<213> Homo sapiens

<400> 54

ccgaataccg acaaaatacc gataccggt

29

<210> 55

<211> 29

<212> DNA

<213> Homo sapiens

<400> 55

tggtagtgag agttttaag atagttcga

29

<210> 56

<211> 18

<212> DNA

<213> Homo sapiens

<400> 56

cgcctcatct tctcccga

18

<210> 57

<211> 27

<212> DNA

<213> Homo sapiens

<400> 57

tctcataccg ctcaaatcc aaacccg

27

<210> 58
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 58
 gttaggcggt tagggcgtc 19

<210> 59
 <211> 19
 <212> DNA
 <213> Homo sapiens

<400> 59
 ccgaacgcct ccatcgat 19

<210> 60
 <211> 31
 <212> DNA
 <213> Homo sapiens

<400> 60
 caacatcgtc tacccaacac actctcctac g 31

<210> 61
 <211> 25
 <212> DNA
 <213> Homo sapiens

<400> 61
 tggatgatgga ggaggtttag taagt 25

<210> 62
 <211> 27
 <212> DNA
 <213> Homo sapiens

<400> 62
 aaccaataaa acctactcct cccttaa 27

<210> 63
 <211> 30
 <212> DNA
 <213> Homo sapiens

<400> 63
 accaccaccc aacacacaat aacaaacaca 30

<210> 64
 <211> 22
 <212> DNA
 <213> Homo sapiens

47675-18.ST25.txt

```

<400> 64
tggagttttc ggttgattgg tt 22

<210> 65
<211> 19
<212> DNA
<213> Homo sapiens

<400> 65
aacaacgccc gcacctcct 19

<210> 66
<211> 12825
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (3788)..(3788)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (9889)..(9962)
<223> genomic amplicon sequence

<400> 66
ggatccagcg tcagccacct gaggaacatc ccaacacatg tcatgcctcc gggccttcac 60
ccatgctggt ctgtaagccc ggaaagcctt tctctacagc agccccccga cccactttgg 120
gcactcctat tcatccttca gtaaccaaga agaaggatag caatatttcc tccttgggga 180
actcttcttg ggtgtccaca agagagttca ttgttccctc ttggtgctcc cccaggggtg 240
tttgattatt ctttatgga ttgctctttc cccaacagac agagctcttt gaggctgggg 300
atgctgtctg aatcatccct agatcttact gcacctaacc tggggcctgg aaacaggggtg 360
ggtgtctggt gaatgcttga ggggttgggg gaggttaggc ctgttgaggc gcatgggcca 420
taaatcacct tcccaagcca gggggaaagc agcaatccag gagagcttca cggaggtggc 480
aggacgggat gtaggacgga ggcaaaccat agactcgagc gcggtgaggg catcattcat 540
gagacctctg ccctccgttc ttctgccagg aaaccctgt cctgggtgct attggccagg 600
gataagcaga ttttgagggg gggaatcagg cttcttcaag gcgttaggtc tccactcaga 660
ggatatgtggc tggggcagct gctgggggct gcagctggtg tctgtcccag agcccaacgg 720
ctgtgtgtgc cttaatccca gtccttggtg cccccaggc tggcaggtgg actgatgagg 780
cagaaaggag gcaacaggag aggggtggag agccgagccc cctctccagg tccccacagc 840

```

47675-18.ST25.txt

cgccctctgg	atcttgctac	atgtgccacc	ccatcaccag	gtcctcgtca	ccagctatcc	900
cctcagccct	gagctgctcc	tccctcagcc	cttagaggga	ggcttgacct	ccttgaggta	960
ggaagattca	gcttaaaaag	ttcaaactgg	aaaacacaaa	gaagagatgg	atgtcacggc	1020
atctgtgccc	cttagcgtct	tctttctgaa	tggggctggg	gatgtttagg	cacatagggtg	1080
gagacaagca	ttcacactgg	gactgagggtg	tggacgtacc	taacttagaa	tatgagcagg	1140
tgggacgcat	ctgtgggtgtg	cacatggcat	gtgaagtgtg	tgtgttctgt	aggtgagggg	1200
tgcacagcat	gggagggtata	cgcattgtgtg	aggtgtgcat	ggactatgaa	gcatgcacag	1260
tatatgaggt	gtaatatgtg	tgatatgcac	atgatgtgag	agaggaaata	tcccatatgt	1320
gggacatact	gctgttggag	gtttacatgg	catgtgagtt	tacatagagt	gtcaagtgtg	1380
tccggagtgt	taggtgtaca	tggcatgtaa	tgtgtaaaca	atgtgagact	tgtacatagt	1440
atgtgaggta	acatggagtgtg	tgagggtgtgt	gtgtgtgtga	gggtgtacatg	gagtgggata	1500
tgtacacaat	ataagagatg	taccagtggt	gtaacatatt	catggagtgt	gaggtagaca	1560
tggcacaaga	gagatacaca	cagtgcctga	gatatatgtg	gtatgtgagg	tgtacagaga	1620
gggtgaactg	tacattatgt	gagagggtgtg	cagtatgtga	gaggtgtaca	gtatgtgaaa	1680
gggtgtgcagt	atgtgaaaga	tgcacattat	gagagaggta	gatggagcat	aagggtgtaca	1740
ttatgtgaca	ggcatagagg	gaacgtgagc	tgtacattct	gtgagaggca	cataggaatt	1800
gtgagggtgtg	cactatgtga	gaggatataca	ttatgtgaaa	gatgtacatt	atgagagaag	1860
ctgcaggcag	catgtgggtgt	acatcctgtg	agaggcgtgc	agggagtgtg	aggcgtgcgt	1920
tctgtgagag	gcatgcaggg	agtgtgaggt	gtgtattctg	tgagaggcgt	gcaggggggtg	1980
tgcggcgtgc	attctgtgag	aggcatgcag	ggagtgtgca	gcatgcattc	tgtgagaagc	2040
gtgcagggag	tgtgaggcgt	gcattctgtg	agaggcgtgc	agggaatgtg	aggcgtgcat	2100
tctgtgagag	gcgtgcaggg	agtgtgaggc	gtgtattctg	tgagaggcct	gcaggggaatg	2160
tgaggcgtgt	attctgtgag	aggcgtgcag	ggagtgtgag	gtgtgcattc	tgtgagaggc	2220
gtgcagggaa	tgtgaggcgt	gtattctgtg	agagggtgtgc	agggagtgtg	aggcgtgcat	2280
tctgtgagag	gcgtgcaggg	aatgtgaggc	gtgtattctg	tgagagggtgt	gcagggagtgtg	2340
tgaggcatgc	attctgtgag	aggcatgcag	ggagtatgtg	gcatgcattc	tgtgagaggc	2400
gtgcaggggg	tgtgtgggtgt	gcattctgtg	agagggtgtgc	agggagtgtg	aggtgtacat	2460
tatcagagag	gtgtacaggg	agcgtgcact	gtatattgtg	tgagagggtgt	gcacagtgtg	2520
aggtgagcac	tgtatgtgac	ttgtctgcag	tttatcagggt	gcacatagct	atgacaccac	2580
aaaggcatat	ggaagaatgc	aggtgaggac	aaactgtcct	tccaagaaaa	tgtgcttgtc	2640

47675-18.ST25.txt

agctctgtcc	tgggctcaca	ctctggacgc	atggcacaac	ctcctgagca	gtgtcacagg	2700
cagaggagac	agagggacgt	cctctggctt	ttcaggagtc	cttttataca	taaaggagaa	2760
ggcagctttg	agaggccttc	tcttccatcc	ttctgcctgc	atccatacca	cgttagctca	2820
agggcaatgt	gctctttgag	gaataccata	cgttggtaat	attatTTTTA	catctgactt	2880
aaatccctca	tgctgcaagt	tgaattcgca	TTTTTTTggt	gctttcaaAT	gtgaaggtag	2940
tgaactctcc	tttcatgtag	acctcctcac	cccgggagcc	taatgtcttt	aggctagaag	3000
aataattagc	accttcatga	gctctgcctg	cttgaacact	tctagtcatt	aagttattgt	3060
caccttattt	gtgttgttta	gtaaacagcg	catgtgtatt	tcaaaccCCA	ggaatctagt	3120
cccacaaaga	ccccagggct	cacctctgag	gcagagaaag	tctttaatta	cataaagaat	3180
aagcttgaag	aagagaggct	ggatgaatga	atgaacgcct	caggctcttc	cagaagccag	3240
gcatcagtgg	gttcttaagc	ctggcctcag	cttccccctac	ctggtgggca	gtctcagctc	3300
ctgctatttt	cactcatctg	gcttccctagt	gtctgggaaa	gaaccCGgag	tgagaggcat	3360
tgtgagggct	gcatggaatg	tgagggtgcac	atggcatgtg	gggcctcgtg	ggggaaagag	3420
ctgggcgggc	tgCagggagg	gtccccccat	aacaccaagc	tcacatgggt	cacatcccat	3480
gccctttage	ctcttccccct	gggtagcagc	ccaccctcat	ctcacatcct	gaattgggct	3540
aaagcttagt	tctagatgaa	gttataatta	aatttAAAAT	cacatctaga	gaattccctc	3600
ttaaatttaa	gtactatgtc	agttttggag	ggagtTTTTA	taaacctatt	gaagagggga	3660
ataaacagct	ctagcctatt	atgcctagtt	cttcaagaat	ctcttggttt	gtaagatatt	3720
ctttcattag	aagtaacaaa	ttggccaggt	gcgggtggct	catgcctgta	atcccagcac	3780
tttgggangc	tgaggcaggt	agatcacctg	aggtcaggaa	ttcgagaaca	gcctggccaa	3840
catggtgaaa	ccccatctct	actaaaaaca	cacaaaaaAT	agccagacat	ggtggctcgc	3900
gcctgttgtc	ccagctactc	aggaggctga	ggcacgagaa	tcgcttgaac	cccggcagca	3960
aaggttgcag	tgagctgaga	tcgcgccact	gcactccagc	ctgggcgaca	gagcgagatt	4020
ctgtttcaat	TTTTTAAAAA	agaagaagaa	gtaacagatt	gcccatacaa	ccccatgccc	4080
aaactctatc	tcgtgccacc	cccacacccc	ccagccccta	cagctccagg	agccatgcct	4140
gtctgtaccc	acagaaatcc	tctgtctcta	gcagaagcga	ttgtcccata	gaaggTgtc	4200
aataattatt	ttgttctctc	tgccgggagc	attcttcccc	agatgccaca	tggctaactc	4260
ccaagcctct	tttaactctt	tgctcaaATg	ttaccttgcc	aacctgacca	ctctgtttaa	4320
cactacagcc	gaccccaacc	tggcacctca	atcctgctca	tcttgTtctg	cttgtaatat	4380

47675-18.ST25.txt

ttttctgcgt	gtatcgctt	ctaacatcta	tataatttat	ttattattat	gtgtattgct	4440
tattgtctgc	cctgccctgc	ccgcatgtca	gttccacagg	aacaaggaac	atgggtctggt	4500
tcattctcca	tcacattccc	agcacctgaa	taaatgtttg	ttgtataagt	gaatgaatca	4560
tagactggac	aactgagagt	gggaatatcc	ccaccacccc	aatagtgcc	tgccccacc	4620
ccctgcacac	tgggtgggaa	gggcacatgc	tgttggttgt	cttctgttc	cctccctcca	4680
cagtgtggac	tcctgttctt	caactcccag	ctcagctgcc	agactcctaa	gccctgcttg	4740
tctgtgggag	gctggagagt	acccccaaag	ggggaaatgt	ggccttctgt	gaggaatctc	4800
tgggacctg	tcctaattct	gggacctgt	ctatatcctg	gcaatatcac	agtccctcct	4860
gaccaacca	gactgggccc	agagaaggat	ctatacccat	gtggtgggtg	gattttggct	4920
ttcccagga	gcaagtttgt	caggggacag	agggaggcac	tcaggttgga	cccaggaaca	4980
ggaagggaaa	ggctggggac	agagagggga	cctggagctg	gccctgcccc	accaggccca	5040
ctcatgcttt	taccttctgg	ccctttggcg	ccccccactt	cccggccaga	tacgcagcct	5100
gtgtcagccc	cagtgcagag	ccacaggccc	agcttgggca	ggggcagggt	gcgtgaagac	5160
tggggcaggt	gcaggctgga	ttgggtttcc	agaggctata	tatataaagg	ctgccgggag	5220
ccccagggcc	gctccctgag	ggcacaacac	tgtggggggc	cagccaggcc	cgcattcctt	5280
tccagaggcc	agctttccat	ttatagcccc	tgggcagagc	agccaaggga	gctgagaggg	5340
gaggactgga	aagggcagag	ggagaagggg	cagcccaggc	agcactccct	ccccactccc	5400
caccaaata	gcccctcatc	atgaagacag	cagaagccag	gccagggcg	aggtgtgcac	5460
atgcccccaa	gcacagagcc	taccattctg	gtcagacctg	cgttgagggg	tgagggggct	5520
gccagggatc	cctcaaagtc	ctcagcccat	tgctagtggc	ccctcacaga	acaagtccag	5580
cacctgtgga	caaagggcac	ccttgactag	actctgcagt	ataagagttt	gaatgttttc	5640
agcttccaaa	cttggtatcc	tttttccctc	cgcccccaac	ccagcactgg	gactaaaagg	5700
acaacatgtc	ccaggttgga	catacttctc	cctgctctgt	gggcagcagg	gaagagatga	5760
tgggtgtgac	aaacctctct	ccaaagagga	gacgcaacca	gaagggtgat	tccaggcagg	5820
tgtggatgcc	aggcatggag	aggtctgaaa	tggtcaccga	gttcagttag	ttccaatctt	5880
tttttgagca	acggaagcct	ggtagcaaac	aaaaatccca	cttgaaagcc	taatataaaa	5940
atggcatttt	accctagaa	tgtctgtgtg	ctttaaaaca	gcgcttccta	attatgggaa	6000
gaagatgtag	ctgcaaata	agcttaaaac	tgtcaaagca	gtttagattt	ataagccata	6060
agtgataaaa	tattaaatgt	gtttggtaag	ttcaaacata	taacatttac	ttatttattg	6120
taaaggcaac	ttgatgacag	ccctgaggaa	gttttttagaa	actcaaagca	caaaaagcaa	6180

47675-18.ST25.txt

agttgtattc acttgtctca gcatccaatt tattttgtag tttcttgctt attcagattt 6240
 ggggaaaatc tagatttgca tagataagtg gtttgaatag ctcacctggg aatctcagag 6300
 tactctttta ttaagtagac tcattcattc atttgcccaa gaaatattta ttgagtgcct 6360
 actatgcacc tggctttctg ctgagcctga gcaagtagga agagtatttg tttctaaatc 6420
 atcaatacaa caattactta cattcctcat tgtgagtata gtgaaaaaac aataagaaga 6480
 cacatcgaga tgccaaatct ctctatagta taccactaca atattgcagc atgccatgta 6540
 taatgcccag ttcaagagaa catgccccag gcagatgggg tctgagcctt tcctgggaag 6600
 agcaagtgta atagaacatg gatgtctaata catgtatgtg acttcccagt tttgaagaaa 6660
 ttcaaccatc ttcattaatg tcacagttca agacgttcaa atatatgcat agagatgcaa 6720
 agggcgtgag gccactcatt cattcactgg acatttatca ggtgcctact gtgtgactgc 6780
 cactgtgatg gtttttgga atgtcattgt gaacaaaaca tctttgcctt catggggcta 6840
 agtcagtcac gaacaaacta atgaagaaga ttataaagag tggcagtgcc tggaaggaaa 6900
 ttaacagggg ggtgtgaacc agagtatggg gggcagttat cttagaggga atggtcagtg 6960
 atgtcccaag gaggcaagaa gatctattat ataaaatgca gtcaatcttg ggaaaagccc 7020
 aggggataat gctatgagtt tagagcagca aggacaaggc tccaaggcag gatcctgttc 7080
 agagtgttag aagacaagaa aggaggtcag gctaactgga gtagagcaat caaacggat 7140
 ggtgcctcca ggtgtagtaa gagacacagg ctgaggctag ctcatgcagg gcctgatagg 7200
 ccaggggatg gagatgagat ttactctaa atgcaagaag ctgctgggga gtttgaagca 7260
 ggaggatggc ataatcccat ttacattgta aaggcttact caggctgcta tgtaacgaat 7320
 ggattatact gaggctacag aggaagtgag gagggcagcc aggttattgt ggtcatccag 7380
 agcagcagtg tgacagctta gtccaggatg gtgacactag ggatggactg acttgagaca 7440
 ggtcttagag gtagaatgga cagctcttcc tcatactcag acctctcctt gggaactcca 7500
 gccttaaaaa tccccctgcc taatccacac ttccatctgg atatccgata tgcatttcaa 7560
 atttttgccc aaacctggac acttaatcta ccaccacaa acctagtctt ctcaactcca 7620
 ttcttgacagg agtcacctt agctccttgc ttatctcact tccacatgc aatcgtgagt 7680
 aaatactgct agctccatct tgaaaacata tatctagaat tcaaccacca cttttcacca 7740
 gctccactca ctggggatta ttgcaatagc ctctaattg gtctccctcc ttctgcctt 7800
 tccctccagt aaccagcatg ctctgttaa aatgtaaadc agatagtgat attcttctct 7860
 tccgctcaag ccctccagtg agatggctca agccatctca gaatataatc ctgtttctct 7920

47675-18.ST25.txt

ctctctcacc ccatttccca ctatctcttt tactcaccct gctgcagaca tatgagcctc	7980
cttgccatac tttgaatctg ccaaacatgg tcctgcctca ggacttttgc acatgcttat	8040
ccctctatct ggccctacat atctccaggt atctgcttcc aattctcttc attcaggtct	8100
ctgcttaaat gtagcagaga ggctttctct aatcactcca taatcttcat cactgtgtct	8160
ccctgccttg ctttttcttc ataaggttc taacctctg gcatcacata cttccttgct	8220
tatttgttca ttgtctatca ccctgcttac attgacaatg taagtgccat gtaagcagag	8280
tcttggtttt gttcattgct ctagccccac acttggactg gtacctgcca cataatggat	8340
acctaacaat atgtggattt ccgggtgacc cctgcagctt ggggtgggtg aggcagaact	8400
tgctggctct gccaggattt agagttactg tctactgctgc tccatgatgt agactttact	8460
gaatgaacaa atacaggtgg gccctatgga gttaaagcgag gtgagtactt catgaaggga	8520
gaccttcagc accactacca gcagcagaga agtgaagaag ttaggacccc aacagagccc	8580
tctgagtttt gtgggaaggg aggacttctt agggcccaga acggccagct agaatgcctt	8640
ccagaagtta gtgggaaagg cacaaagatc actcctgctt aaatttctgg tttccaggag	8700
gggagatcca ggcagggatg tatggccaac ggagattcct agccagagtg ctgagaggac	8760
tgtgtgaact gcagattcag gaagaggctg agagaccccc atgggggtgg ccggtatgct	8820
gaggcttgta tgggagccag atatcccaca tcccatgggg tggttgcctc ctctgtttc	8880
cagcctttcc agtgaggctg caggaaagag acacagctaa ggctggaga ctctgtggcac	8940
tccgtcaggg catggtacca cagatgagtt gtaagcctgc gggacacagc atccaactct	9000
gaaagccctt tgctcgaata accctacatc accgcctgag ggcttcata tccttgggtct	9060
cttcagactg tcatccccac cacaattact ccaagaaatt actgtcatcc ccaaacttat	9120
aactggaaac tgaggctcag gaaggagaca tgacttcac aaaatcacac agttgggaaa	9180
ctctggagtc tgcactcaac tggctcgaa accgactctc ggagacttca ggtgagatga	9240
ggtcaggttc tcaggccagg tcctgaagtt tgacaccttg gcgaaatgca ctttccttga	9300
ctcagcaccg cagtgcaggc ggaacgaagc cccgagcaga agggcttttc ttcccagctg	9360
aagaggcagc tcagcctaga cccagggcat ggcactggac acccctgctg tggaaacgtg	9420
cagatttaga tggaggggat tcctaacctg ggcaggatcc gagtttggag agattggcgc	9480
gaagtttagc agcaatctcc gattcctgta caaccatagc tgggtttcta agcgtctagg	9540
gaagaaggac tgggcccacg acctgctgag caactcccag gtcggggact ggcggaatat	9600
cagagcctct acgaccgtt tgtctcgggc tcgcccactt caactctcgg ggtctctccg	9660
cctgttggtg cactcgtgcg ttctctgccc ctgacgtctt aagctttctg ctttctgcgt	9720

47675-18.ST25.txt

gtctctcagc	ctcttttcggt	ccctctttca	cggctctcact	cctcagctct	gtgcccccaa	9780
tgccttgcc	ctctccaaat	ctctcacgac	ctgatttcta	cagccgctct	acccatgggt	9840
ccccacaaa	tcaggggtac	agaggagtat	tgaaagtcag	ctcagagggtg	agcgcgcgca	9900
gccagcgttt	cccgcggata	cagcagtcgg	gtgttgagga	ggtttgga	gggcgtgccg	9960
gagagccaag	tgtcagccgc	ctagggcttg	ccggtcgctc	cctccctccc	tgcccggtag	10020
gggacctagc	gcgcacgcca	gtgtggaggg	gcgggctggc	tggccagtct	cgggcccctc	10080
ggccaccccg	gggacccccc	ccaagccccc	cccccgagt	ttcctattgg	cctcggactc	10140
cccctcccc	agctgcccgc	ctgggctccg	gggcgttttag	gctactacgg	ataaatagcc	10200
cagggcgctt	ggccgagaag	ctaggggtga	ggaagccctg	gggcgctgcc	gccgctttcc	10260
ttaaccacaa	atcaggcccg	acaggagagg	gaggggtggg	ggacagtggg	tggggattca	10320
gactgccagc	actttgctat	ctacagccgg	ggctcccag	cggcagaaag	ttccggccac	10380
tctctgccc	ttgggttggg	cgaaagccag	gaccgtgccg	cgccaccgcc	aggatatgga	10440
gctactgtcg	ccaccgctcc	gcgacgtaga	cctgacggcc	cccgcggct	ctctctgctc	10500
ctttgccaca	acggacgact	tctatgacga	cccgtgtttc	gactccccgg	acctgcgctt	10560
cttcgaagac	ctggacccgc	gcctgatgca	cgtgggcgcg	ctcctgaaac	ccgaagagca	10620
ctcgcacttc	cccgcggcgg	tgcacccggc	cccgggcgca	cgtgaggacg	agcatgtgcg	10680
cgcgcccagc	gggcaccacc	aggcgggccc	ctgcctactg	tgggcctgca	aggcgtgcaa	10740
gcgcaagacc	accaacgccg	accgccgcaa	ggccgccacc	atgcgcgagc	ggcgccgcct	10800
gagcaaagta	aatgaggcct	ttgagacact	caagcgctgc	acgtcgagca	atccaaacca	10860
gcggttgccc	aaggtggaga	tcctgcgcaa	cgccatccgc	tatatcgagg	gcctgcaggc	10920
tctgctgcgc	gaccaggacg	ccgcgcccc	tggcgccgca	gccgccttct	atgcgccggg	10980
cccgtgccc	ccgggcccgc	gcggcgagca	ctacagcggc	gactccgacg	cgtccagccc	11040
gcgctccaac	tgctccgacg	gcatggtaag	gccgggaccc	caggaagtga	ggaagttagg	11100
gcggcgctcg	ggatatcagg	gacgcgtttc	cgagggcggg	gagctggcct	tcggggaggt	11160
ttgggcccagg	atccttcccc	agagagagga	cccccttgtc	ctgggcagct	gtcactgggg	11220
tagcctgttt	tggaagtgtg	cgggcaagcg	ttcgagctgc	cccattgggg	gcgctattag	11280
aacactgcag	cgcgaacgtg	aagatctttt	tctctactta	tcctacttc	caaaatgtaa	11340
atttgcgccc	cttggtgact	gtccgccctt	ggtttgcccc	tgcattgttc	agacctcatc	11400
tcctaccac	ccgtaattac	ccccccaacc	aggacaggtc	tgggcccgga	actagagcct	11460

47675-18.ST25.txt

```

taggctagag ttagggaggg ggcggctaca ggaattggtg ttcgggcctc gagccgtccc 11520
gcggggcctga ctcagtcgcc cttgctgttt gcagatggac tacagcggcc ccccgagcgg 11580
cgccccggcgg cggaactgct acgaaggcgc ctactacaac gaggcgcca gcggtgggta 11640
ttccgggcct ctccctgctc gtcctcctc cttcatggag ctgtcctggc ctctatctag 11700
gacgtccca cccccactca cacacgccta tgtcctggga agtgggtgcag gagatgaaat 11760
actaagcaag tagctccctg tcttttcgat tgtcccgac tctaactaaa gtcctcagtt 11820
tccaatctgt ctcaaagtac tggggccggg ggtgggaggg ttgtcgcggc cccaccctg 11880
cttactaacc gagccctccc cgcgcagaac ccaggcccg gaagagtgcg gcggtgtcga 11940
gcctagactg cctgtccagc atcgtggagc gcctctccac cgagagccct gcggcgcccc 12000
ccctcctgct ggcggacgtg ctttctgagt cgctcccg caggcaagag gctgccgccc 12060
ccagcgaggg agagagcagc ggcgaccca cccagtcacc ggacgccgc cgcagtgcc 12120
ctgcgggtgc gaacccaac ccgatatacc aggtgctctg aggggatggg ggccgccac 12180
ccgcccagg gatgggtgcc ctaggggtccc tcgcgccaa aagattgaac ttaaagtccc 12240
ccctcccaac agcgctttaa aagcgacttc tcttgaggta ggagaggcgg gagaactgaa 12300
gtttccgccc ccgccccaca gggcaaggac acagcgcggg ttttccacg cagcacctt 12360
ctcggagacc cattgcgatg gccgctcgt gttcctcggg gggccagagc tgaaccttga 12420
ggggctaggt tcagctttct cgcgccctcc cccatggggg tgagaccctc gcagacctaa 12480
ccctgccccg ggatgcaccg gttatttggg ggggcgtgag acccagtgc ctccggtccc 12540
aaatgtagca ggtgtaaccg taaccaccc ccaaccggt tcccggttca ggaccacttt 12600
ttgtaatact tttgtaatct attcctgtaa ataagagttg ctttgccaga gcaggagccc 12660
ctggggctgt atttatctct gaggcattgt gtgtggtgct acagggaatt tgtacgttta 12720
taccgcaggc gggcgagccg cgggcgctcg ctcaggtgat caaataaag gcgctaattt 12780
ataccgccgt ggctccggt ttccctggac atgggtgtgg gatcc 12825

```

```

<210> 67
<211> 73
<212> DNA
<213> Homo sapiens

```

```

<400> 67
gagcgcgcgc agccagcgtt tcccgcgat acagcagtcg ggtgttgag aggtttggaa 60
agggcgtgcc gga 73

```